VERMONT
DEPARTMENT OF HEALTH

Issue Brief – Prescription Drug Misuse in Vermont

STATE EPIDEMIOLOGICAL OUTCOMES WORKGROUP - JUNE, 2014

Summary

- Discrepancies between the perceived problem of prescription drug misuse in Vermont and several pertinent data sets prompted a broader and more thorough look at relevant data.
- The most recent population-level survey data indicates that the prevalence of prescription (Rx) drug misuse in Vermont is declining or remaining steady for all drug categories including Rx opiates. This appears to be a consistent pattern across several independent surveys.
- Treatment admissions for Rx opiates are increasing at a rapid rate, putting a substantial strain on treatment and medical system resources.
- Deaths involving prescription opiates as a proportion of all drug deaths have remained relatively constant over the past several years. However heroin related deaths have increased since 2013.
- Potentially more important than prevalence data might be the monetary cost to society of prescription drug abuse/dependence (e.g., the corrections and treatment systems) as well as the psychological and emotional cost incurred for an individual who misuses prescription drugs and his/her family. This brief does not report on those data, but the SEOW is collaborating with other agencies to access and report on that information.
- The SEOW suggests a continued monitoring of relevant data sets. We note that there is a distinction between the concepts of prescription drug misuse and opiate abuse or dependence, which may explain some of the discrepancies between treatment data (mostly abuse/dependence) and prevalence data (misuse).

Introduction

The State Epidemiological Outcomes Workgroup (SEOW) has devoted several meetings to discussing prescription drug misuse in Vermont. These discussions were generated by a noted discrepancy between the perception of the extent of the prescription drug misuse problem in Vermont and data that appeared inconsistent with this perception. When discussing the issue of prescription drug misuse the SEOW determined that the commonly understood definition is usually limited to misuse of narcotic pain relievers. While the misuse of other prescription medications is a part of the overall problem, the focus appears to be on opiates. Prescription drug misuse is defined as either taking a prescription medicine that was not prescribed to you or taking a prescription medicine in greater amounts than prescribed. In other words, it is the use of a prescription medication in a nonmedical manner.

This *Issue Brief* summarizes those discussions including as much data from as many relevant sources as could be ascertained to examine the issue from multiple perspectives. We have divided this report into logical sections:

1. Population Prevalence Data
2. Treatment Data
3. Mortality Data
4. Morbidity Data
5. Prescription Drugs in the Community
6. Heroin
7. Summary and Conclusions

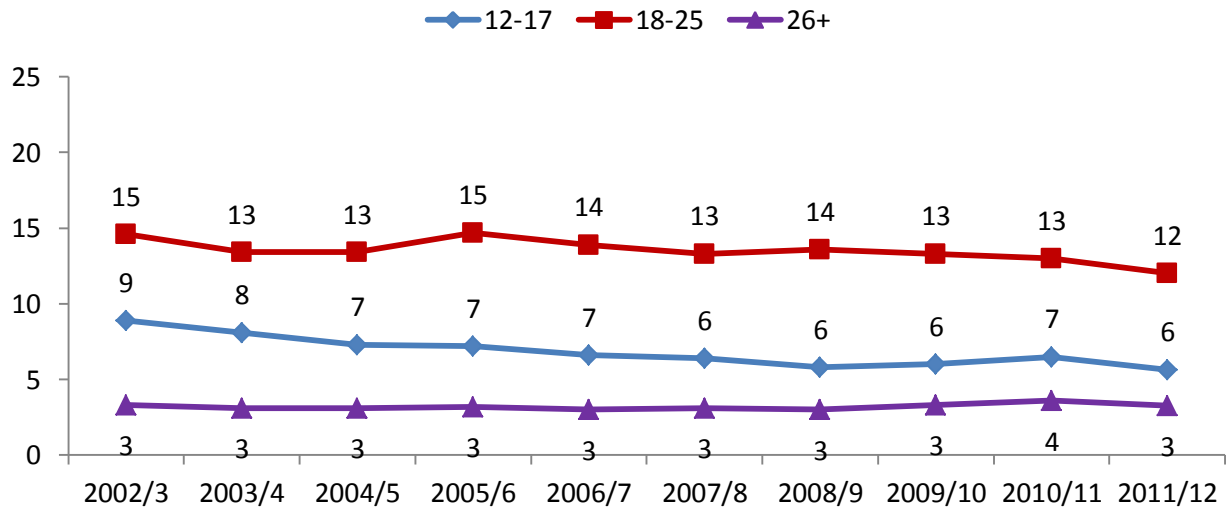
1. Prevalence

The SEOW has three major sources of prevalence data available for examination: National Survey on Drug Use and Health (NSDUH), Youth Risk Behavior Survey (YRBS), and the Behavioral Risk Factor Survey System (BRFSS).

A. National Survey on Drug Use and Health (NSDUH)

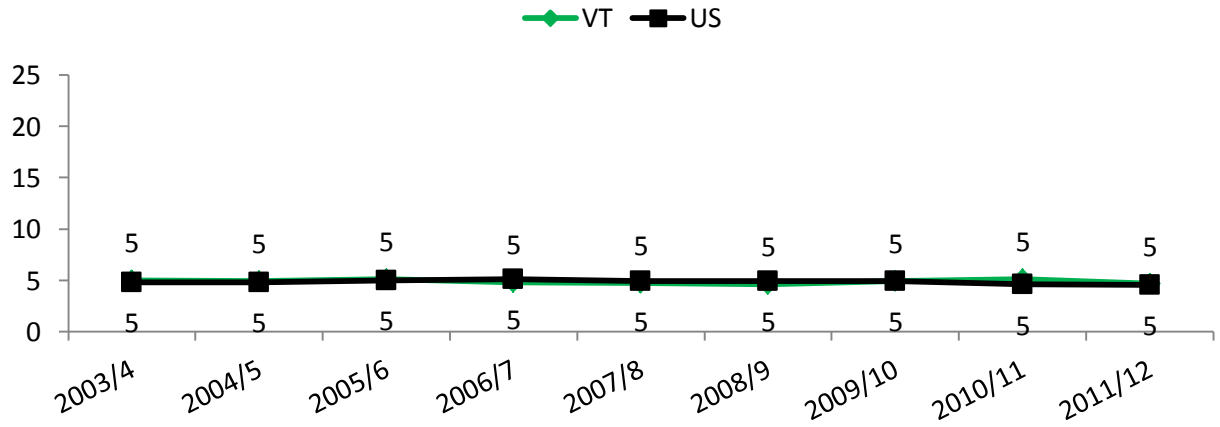
Figure 1 presents U.S. and Vermont specific prevalence trends for non-medical use of pain relievers in the past year (excluding methadone) from the National Survey on Drug Use and Health (NSDUH), a representative household sample of residents aged 12 and up. Vermont prevalence has declined or remained relatively stable since 2002-3. For the 12-17 year old group the prevalence in 2011-2012 represent a significant decline since 2002-3 ($p<.05$). Vermont has a similar prevalence of pain reliever misuse compared to the U.S. We note also that there are no regional differences within the state according to the latest NSDUH substate data (not shown).

Figure 1. Percent of Vermont population reporting non-medical use of pain relievers in the past year by age in years.



Source: National Survey on Drug Use and Health

Figure 2. Percent of population reporting non-medical use of pain relievers in the past year (ages 12+), Vermont compared to the U.S.

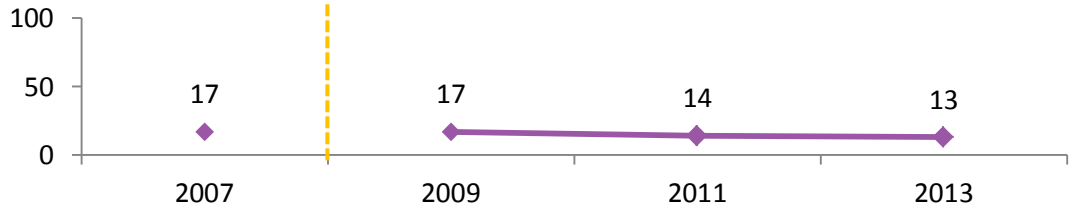


Source: National Survey on Drug Use and Health

B. Youth Risk Behavior Survey (YRBS)

The Youth Risk Behavior Survey (YRBS) is a biennial survey of public school students in grades 9-12. A question concerning prescription drug misuse was added in the 2007 administration. Results from that survey indicated that 17% had taken a prescription drug not prescribed for them sometime in their lifetime. Prevalences were comparable for male and female students. From the 2009 YRBS forward we asked about lifetime misuse of prescription stimulants and pain relievers separately. In 2009, the overall prevalence for both combined remained 17%. In 2011, 14% of high school students reported ever misusing a prescription opiate or stimulant. This was a significant decrease from 2009. In 2013, 13% reported such misuse. An analysis of the 14 Vermont counties determined that YRBS reports of prescription drug misuse were significantly higher in Windham County compared to other counties and the overall state prevalence for both 2011 and 2013. In 2013, prescription pain reliever misuse declined significantly from 2011 (13% to 11%).

Figure 3. Percent of students who used either a prescription stimulant or a prescription pain reliever not prescribed to them in their lifetime



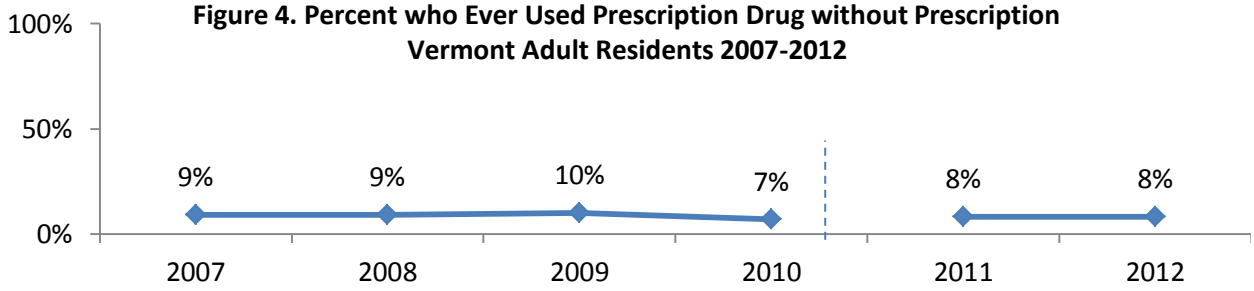
Source: Vermont Youth Risk Behavior Survey

NOTE: The question was split in 2009 to delineate between pain relievers and stimulants, so caution should be taken comparing 2007 numbers directly to subsequent years.

C. Behavioral Risk Factor Surveillance System (BRFSS)

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual random digit dial survey of a representative sample of Vermonters age 18 and older. Questions concerning prescription drug misuse in general were asked for the first time in 2007. The data are summarized in Figure 4. We note a slight decline over time.[1]

Figure 4. Percent who Ever Used Prescription Drug without Prescription Vermont Adult Residents 2007-2012



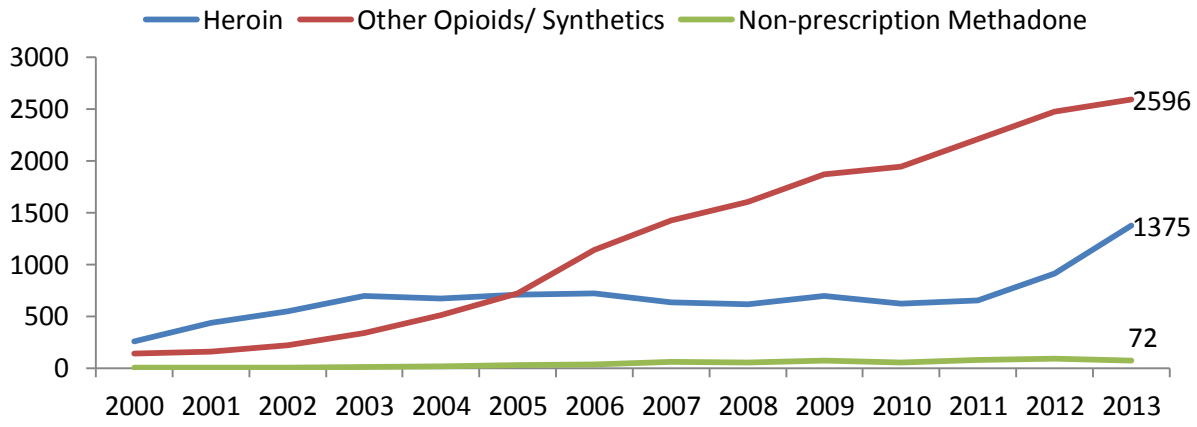
Source: Vermont Behavioral Risk Factor Surveillance System

[1] Changes in BRFSS methodology may make comparisons from 2011 onward to earlier data inappropriate.

2. Treatment

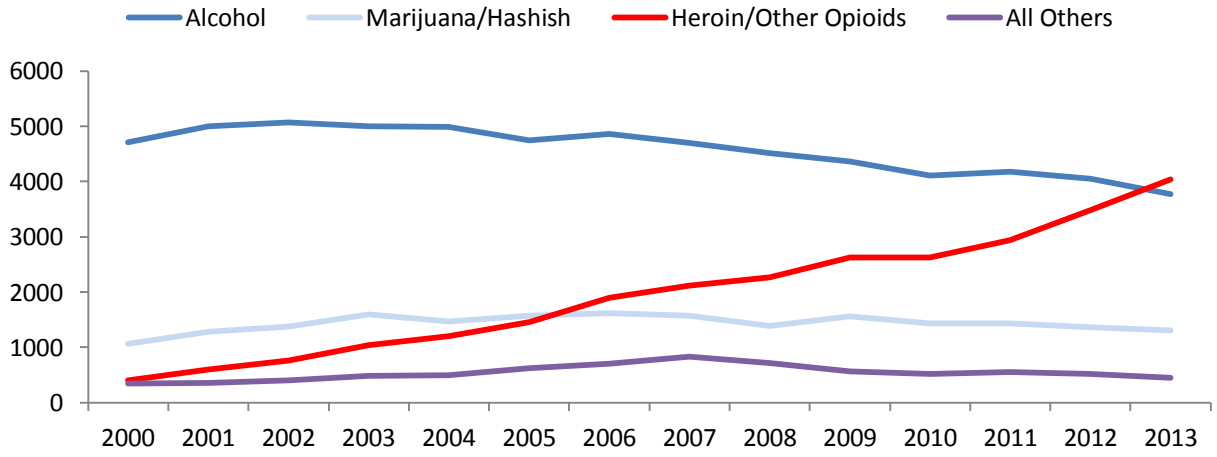
The number of people treated for opiate use problems[2] has increased since 2000 according to the Vermont Substance Abuse Treatment Information System (SATIS), which reflects only people receiving treatment at state-funded treatment facilities (Figure 5). For comparison purposes Figure 6 shows the number of people in treatment for several substances. These rates are subject to a number of exogenous pressures including funding levels and the establishment of methadone maintenance clinics for opiate abuse/dependence in five counties of the state (Caledonia [2006], Chittenden [2004], Orleans [2006], Washington [2008], Windham [2008]). Also of note is that in 1996 the narcotic pain reliever OxyContin® became available, and the average amount of time elapsed between initial opiate use and seeking treatment in Vermont is eight years. Whatever the main cause, this rapid increase in treatment demand has put a strain on treatment and medical system resources.

Figure 5: People Treated for Opiate Use Problems in Vermont by Fiscal Year



Source: Vermont Department of Health

Figure 6: People Treated for Substance Use Problems in Vermont by Fiscal Year



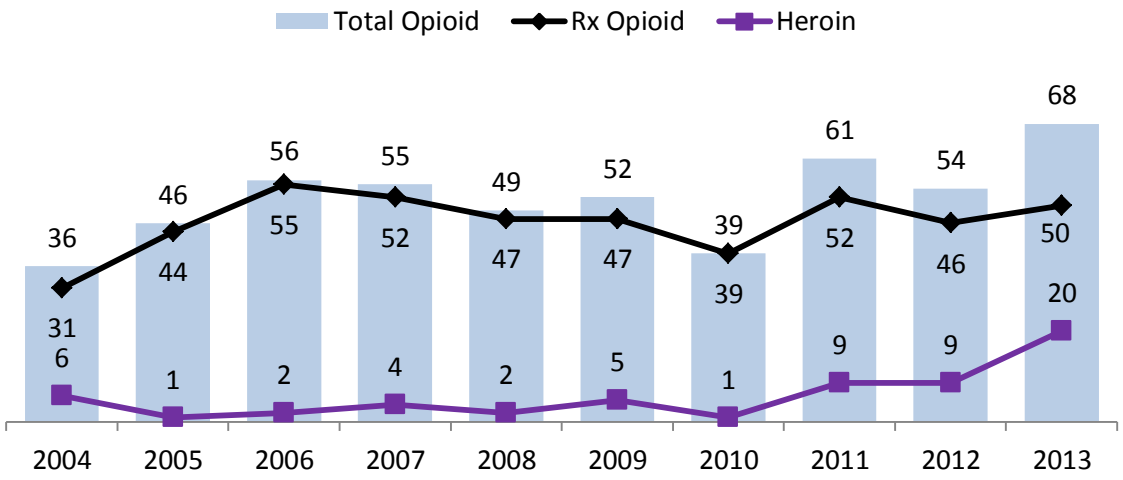
Source: Vermont Department of Health

[2] Note that "problem" includes the formal diagnostic criteria for abuse and dependence which differs from the informal concept of misuse as we defined it earlier.

3. Mortality Data

Data made available by the Office of the Chief Medical Examiner for drug-related deaths for the years 2004-2013 provide another perspective on the most severe consequence of drug misuse. Figure 7 shows the number of deaths due to opioids, prescription opioids, and heroin from 2004-2013.

Figure 7. Total number of drug-related fatalities involving an opioid
January 1, 2004 through December 31, 2013



Source: Office of the Chief Medical Examiner, Vermont Department of Health

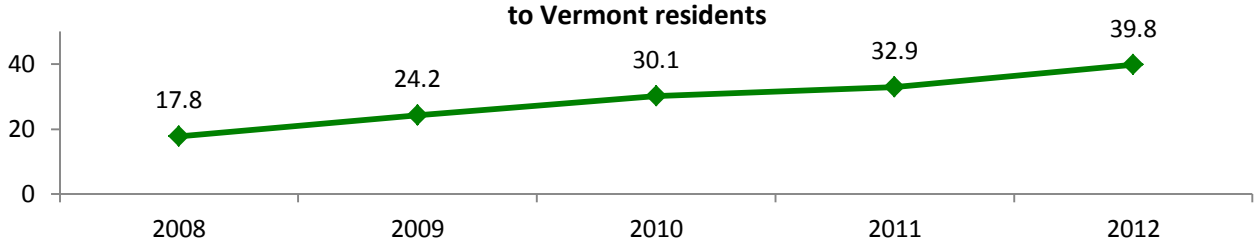
4. Morbidity

A. Neonatal Withdrawal Syndrome

Another marker of an increase in use and subsequent consequences of opiates in general may be the incidence of neonatal withdrawal syndrome (NWS) defined as "drug withdrawal syndrome in infant of dependent mother." (ICD-9). In Vermont, the vast majority of opioid dependent pregnant women are in treatment.[1] Once a pregnant women is identified as opioid dependent, her infant is diagnosed as "exposed to opioids" with a diagnosis code for neonatal abstinence syndrome (NAS). Opioid-exposed infants are monitored for four days in the hospital. Many of these infants never show symptoms of NAS. While some do have signs and symptoms of NAS, only a small proportion of those need to be treated with methadone or morphine.

According to the Kid's Inpatient Database (a national sample of hospital discharges), the U.S. average rate of NAS in 2009 was 3.4 infants per 1,000 hospital deliveries.[2] Comparing this directly to the 24.6 per 1,000 deliveries in Vermont might lead one to think that Vermont's rate is seven times higher. However, because Vermont is a leader in treating opioid dependent pregnant women, provider awareness and access to care might be plausible explanations for the disparity. In addition, the Vermont practice of coding all opioid exposed infants with the NAS diagnosis code might not be the practice in other regions, where infants might only be coded if they display symptoms. The increase in the Vermont rate of opioid exposed infants from 2008 to 2012 can partially be attributed to the increase in provider awareness and the increased access to treatment.

Figure 8. Rate of infants exposed to opioids per 1,000 Vermont hospital deliveries to Vermont residents

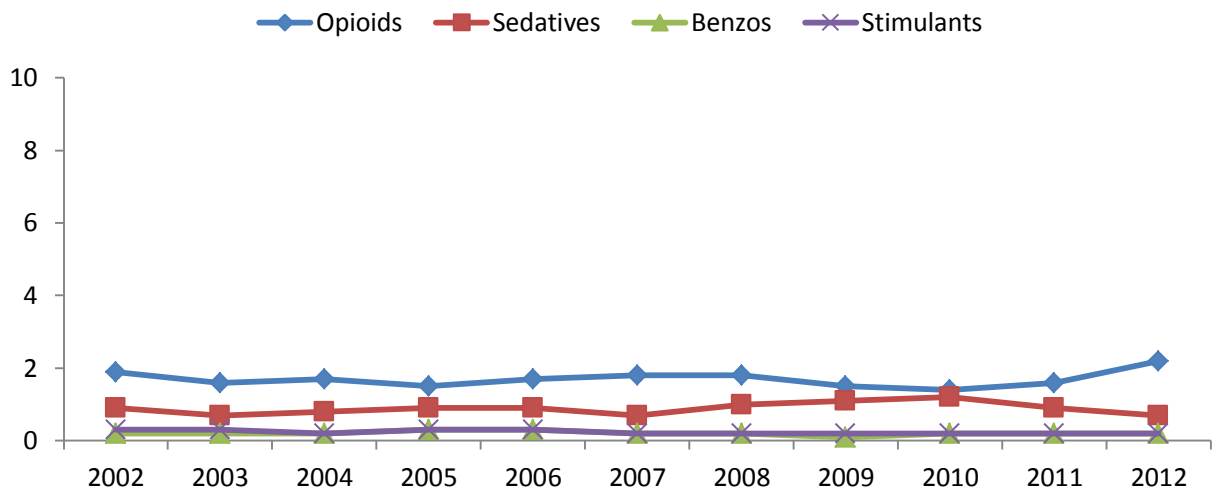


Source: Vermont Uniform Hospital Discharge Data Set, 2008-2012. Cases had any diagnosis code of 779.5 or 760.72, based on the ICD-9-CM.

B. Opiate Related Overdoses

Figure 9 shows the number of Emergency Department overdoses by year and drug type. There was a very slight increase in opioid overdose discharges in 2012.

Figure 9. Emergency Department Discharge Rate per 10,000 People for Overdose, by Drug Type and Year, Vermont Residents at Vermont Hospitals

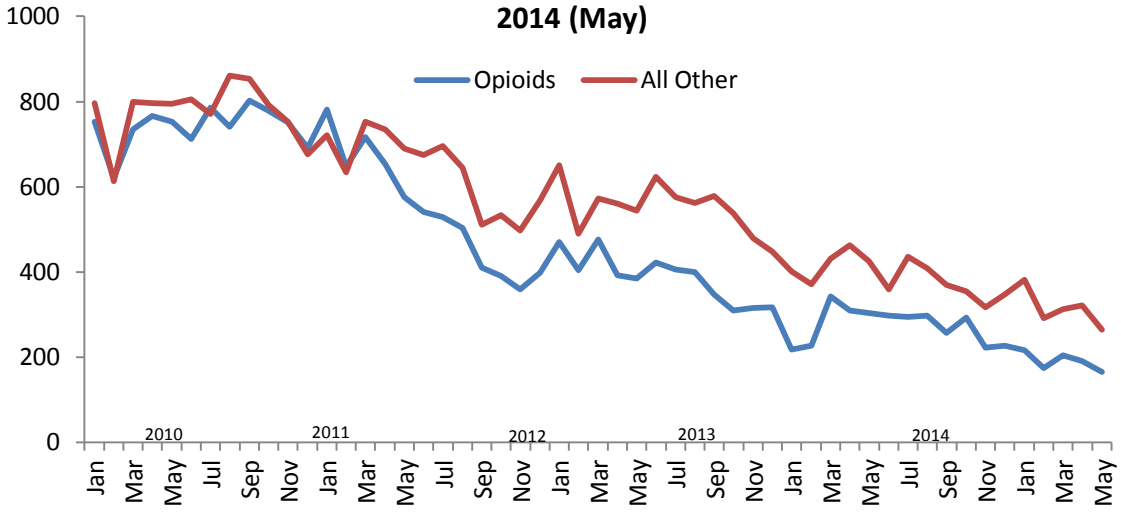


Source: Vermont Uniform Hospital Discharge Data Set

C. Northern New England Poison Center (NNEPC)

NNEPC reports monthly on the number of calls received from Vermont by drug type. Figure 10 presents data on opioid and non-opioid calls for the period 1/10 – 5/14. We note that there has been a decrease in the number of calls for all drug type over time including opioids.

Figure 10. Calls to Northern New England Poison Control Center 2010-2014 (May)



Source: Northern New England Poison Center

5. Drugs in the Community

A. Vermont Prescription Monitoring System (VPMS)

The VPMS was established by Legislative authority (Act 205) in 2006 and was made operational in April, 2009. The act requires all pharmacies serving Vermont residents to submit all prescriptions of controlled substances (Schedule II-IV) to a central data base every week. The database contains all prescriptions of controlled substances written on or after July 1, 2008. As of January 31, 2014, 397 pharmacists and 2437 prescribers have been enrolled in VPMS. VPMS was designed as a tool for prescribers to both identify potential misuse and to offer medical assistance and support for individuals with possible substance abuse/dependence.

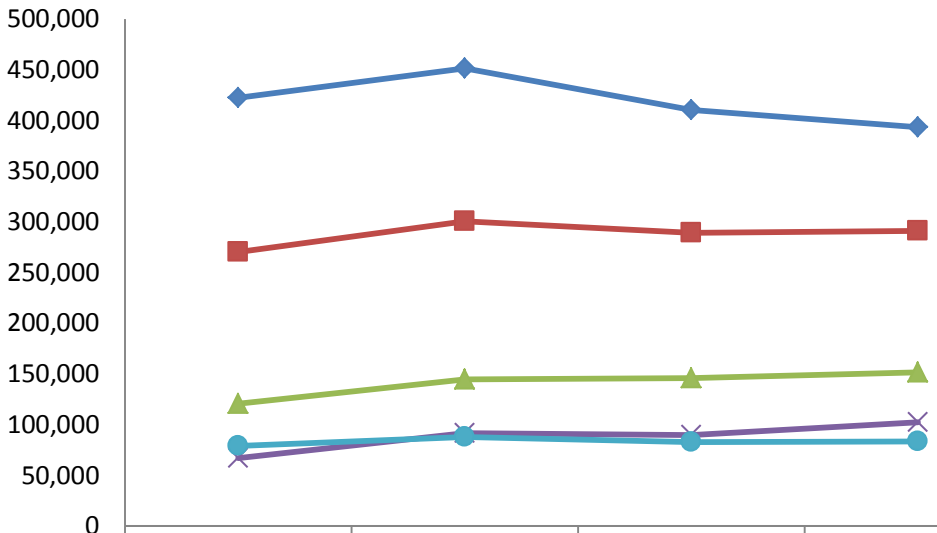
Table 1 contains the total number of prescriptions and people receiving prescriptions for schedule II-IV drugs by fiscal year. Of note, over one million prescriptions are filled each fiscal year in Vermont. Data from FY2010 is most likely not complete as the law was still taking effect and pharmacies were not yet fully reporting to the system.

Table 1: Total # of people receiving prescription for schedule II-IV drugs and total number of schedule II-IV prescriptions by fiscal year

	Fiscal Year 2010	Fiscal Year 2011	Fiscal Year 2012	Fiscal Year 2013*
Total # of People	190,833	192,740	185,761	170,903
Total # of Prescriptions	979,472	1,096,797	1,037,101	1,048,975

Figure 11 shows the number of prescriptions filled by Vermont pharmacies by drug class and year. These five classes of drugs represent 98% of all scheduled prescriptions in the VPMS. There has been little change between classes over the three years measured.[3]

Figure 11. Number of prescriptions by therapeutic class



	FY2010	FY2011	FY2012	FY2013*
Opiate Agonists	422,000	450,898	409,810	393,026
Sedatives	270,125	300,597	288,785	291,063
Stimulants	120,655	144,343	145,835	151,243
Opiate Partial Agonists	66,738	91,584	89,516	101,987
Anticonvulsants	79,119	87,947	82,586	83,380

*Fiscal Year 2013 data is preliminary.

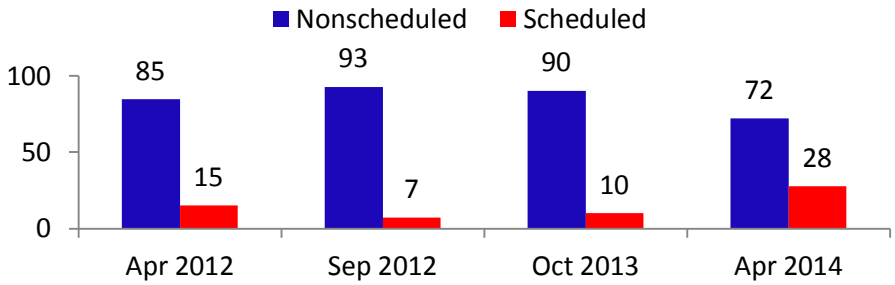
Source: Vermont Prescription Monitoring System

B. Take-Back Day

Every few months local police departments in conjunction with the Drug Enforcement Administration sponsor a "Take-Back Day" so that citizens can safely dispose of unwanted, outdated medicines. While federally sponsored, the program is implemented at the local level. Typically, this results in impressive amounts of medications being returned and safely disposed of. Until recently, it was unclear what proportion of the medicines being returned were scheduled drugs. The Burlington Partnership for a Healthy Community (a local prevention coalition) secured the volunteer services of two pharmacists to actually inspect about half the drugs that were returned during the take-back day on April 26, 2012 and September 29, 2012. Figure 12 presents the results of this inspection. Scheduled drugs accounted for 15.3% in April and 7.2% in September of the number of drugs inspected. Of the scheduled drugs returned and inspected, in April 98% and in September 87% were narcotic pain relievers.

[3] Opiate agonists are defined as those drugs that bind with the opiate receptor sites in the brain to facilitate pain relief (e.g. heroin). Opiate partial agonists bind with only a subset of opioid receptors (e.g., Buprenorphine).

Figure 12: Proportion of Scheduled and Non-Scheduled Drugs Inspected on Burlington Take-Back Day 4/12, 9/12, & 10/13



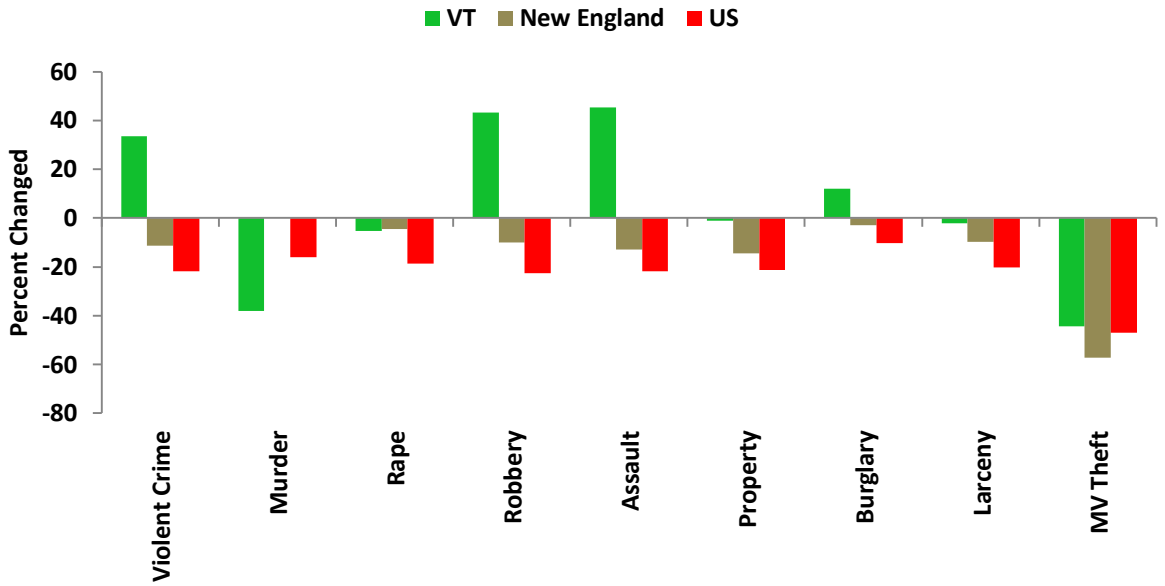
Source: Burlington Partnership for a Healthy Community

C. Crime Associated with Prescription Drugs

The police chiefs of several communities in Vermont have indicated that prescription medications (specifically opiates) have contributed to a rise in associated crimes (e.g., robbery, burglary). This is primarily qualitative data since there is little if any quantitative data on the topic. We note that at the suggestion of the SEOW, the Chief of Police in Burlington is now (as of July 1, 2012) collecting data specifically on drug- and alcohol-related crime activities. Once data have accumulated sufficiently, we will be able to report it. In the meantime, the crime data from the Uniform Crime Reports compiled by the Federal Bureau of Investigation are the best data available. Figure 13 shows the change in selected crime categories for the US, New England Northeast Region, and Vermont from 2002-2012. For Vermont, there were increases in violent crime, robbery, aggravated assault, and burglary. However, Vermont is annually ranked among the lowest of all US states in all crime-rate categories[4].

[4] http://www.infoplease.com/us/statistics/crime-rate-state.html

Figure 13: Change in Crime Rate Per 100,000 Residents from 2002-2012



Source: Federal Bureau of Investigation[5]

6. Heroin

While this brief is primarily focused on prescription drug misuse it is worthwhile noting that heroin also plays a factor in overall opioid use/abuse. From an economic point of view, as prices and availability vary among different opioids, the one that is less expensive and more available is usually the substance that is misused the most. Availability can be defined in several ways:

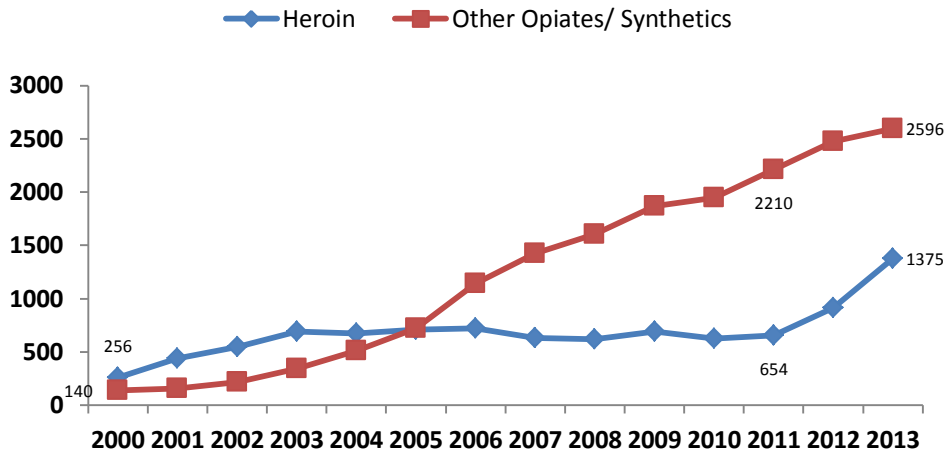
a. Legality – Prescription opioids are legal substances and therefore are always widely available in specific concentrations; heroin is an illegal substance and purity varies as do the substances it is combined with.
b. Abuse Potential - OxyContin® has been reformulated with "physicochemical properties designed to make them harder to crush for unsanctioned routes of administration such as snorting and injecting, with the intention of reducing diversion."[6] The new abuse-deterrent formulation went into effect April 16, 2013. Subsequent reports have suggested that this reformulation was at least partially responsible for the putative increase in heroin addiction.[7]

Figure 14 shows the number of individuals in state-funded treatment for both heroin and synthetic opioids (e.g. OxyContin®). While treatment seeking for synthetic opioids has risen dramatically since 2000, there has been a sharp increase in individuals seeking treatment for heroin addiction since 2011. Although at this time we cannot distinguish between an actual rise in heroin or opioid addiction and an increase in treatment availability, the escalation is noteworthy. From 2011 to 2013 there was a +18% change in the number of people in the treatment system for synthetic opioids while the change for heroin was +110%. It is important to note that the Care Alliance for Opioid Dependence (also called the Hub and Spoke System) was implemented during this time

[5] New England Region = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
[6] https://www.guild.org.au/news-page/2014/03/20/oxycontin-reformulation--effective-1-april-2014
[7] http://articles.latimes.com/2013/apr/17/news/la-heb-abuse-resistant-oxycontin-20130417

period resulting in substantially increased access to care throughout the State. To put these numbers in context, we note that state prevalence estimates from the National Survey on Drug Use and Health for 2010-2011 (the latest available) indicate that heroin use among those 12 and older in Vermont is significantly lower than the US as a whole and showed a significant decrease from the 2009-2010 estimates. This further highlights the contrast between general population prevalence and apparent treatment need.

Figure 14: Number of Persons in the VT State Treatment System for Two Classes of Opioids FY 2000-2013



Source: Vermont Department of Health

7. Summary and Conclusions

Several states are experiencing a dramatic surge in prescription drug misuse and associated consequences (particularly drug-related deaths). The Office of National Drug Control Policy has declared prescription drug misuse an epidemic. Prevalence data in Vermont do not show increases in the misuse of prescription drugs over the past several years for any age group. In fact among adolescents 12-17 year old the data demonstrate a significant decrease in prescription drug misuse over the past several years in multiple data sets.

However, the treatment data show something quite different, especially in terms of burden to the system. It is important to understand that there is a substantial difference in "prescription drug misuse" and a diagnosis of substance abuse or dependence. The former condition requires a minimal behavioral event – e.g., taking a pain reliever prescribed for one condition (e.g., dental work) for another condition (e.g., severe headache) for which it was not prescribed; or taking two pills instead of one (more than prescribed). Abuse and dependence are criteria based concepts that by definition are serious and often chronic conditions requiring medical attention. That is to say that "misuse" and "abuse/dependence" may not ultimately be useful to compare. The fact that prevalence data are low and steady across time while treatment utilization has substantially increased supports this notion.

In July of 2012, pursuant to 18 V.S.A § 5(3), the Commissioner of Health created the Unified Pain Management Advisory Council to discuss best practices related to the appropriate use of controlled substances in treatment of chronic, non-cancer pain and addiction, and in preventing prescription drug abuse, including creation of guidelines for the use of VPMS.

In 1996 the narcotic pain reliever OxyContin® became available and since 2001 it has been the top selling drug in its class and one of the most prescribed drugs in the United States.[8] Since January, 2001 ambulatory care facilities (i.e. hospitals) have been required by the accrediting agency to assess and treat pain in patients. This combination of required pain treatment and narcotic availability along with aggressive (and subsequently determined to be illegal) marketing by the manufacturer may be at least partially driving misuse through increased access and risk for abuse/dependence through drug diversion.

It is notable that misuse, abuse/dependence and associated consequence rates are significantly higher in some states than others. This is particularly evident in mortality data: Rhode Island, West Virginia, New Mexico, and Nevada have drug-related death rates (deaths per 100,000) 2 -2½ times that of Vermont.[9] There also appears to be some regionalization in prescription drug misuse as defined by rates of nonmedical use of pain relievers in the past year - the West Region has a higher prevalence across all age groups and is significantly higher than the Northeast Region among those 12 and older.[10] The reasons for this "Western bias" in the nonmedical use of prescription pain relievers are not immediately obvious.

The SEOW has devoted several meetings in the past year with no firm answers emerging. One thing is quite clear – there is a widely held perception in Vermont that prescription drug misuse (especially opioids) is a serious and growing problem that needs to be addressed on multiple levels. The SEOW will continue to collect and analyze relevant data that shed light on this issue.

For questions or additional information, please contact:

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[8] http://www.drugs.com/stats/top100/sales
[9] http://graphics.latimes.com/usmap-state-drug-deaths/
[10] National Survey on Drug Use and Health 2011/2012
http://www.samhsa.gov/data/NSDUH/2k10State/NSDUHsae2010/NSDUHsaeAppB2010.htm